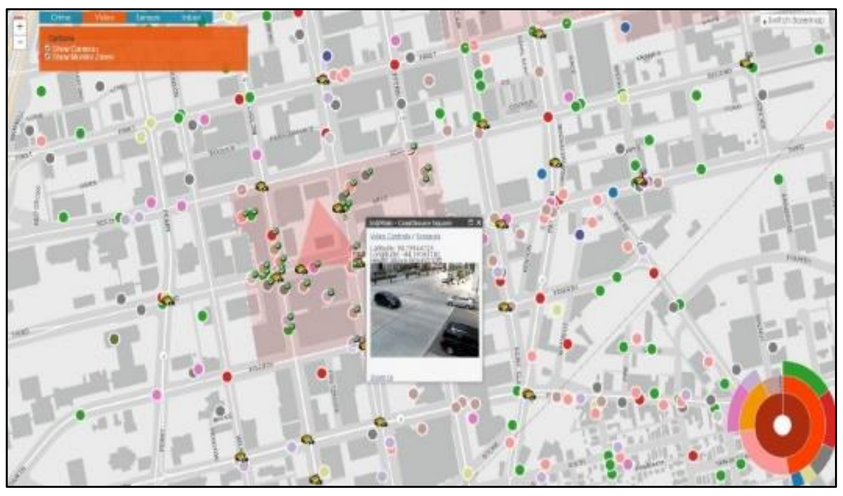
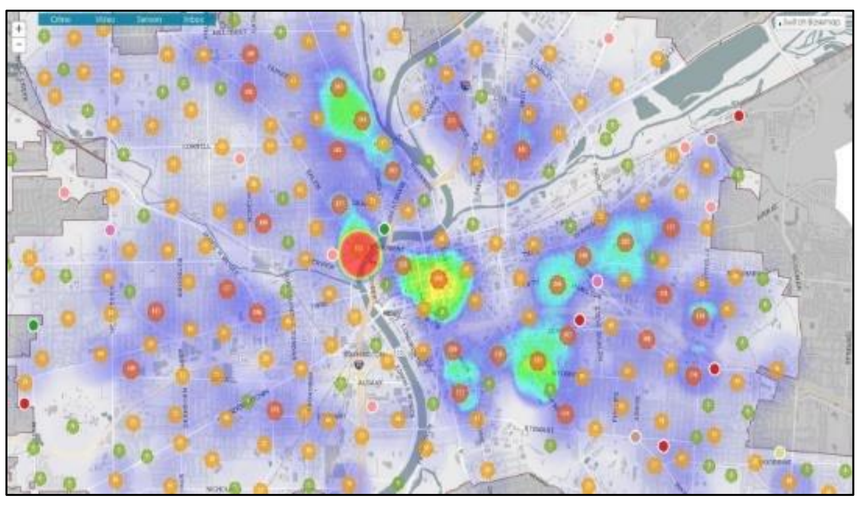
UDRI Sensor Systems

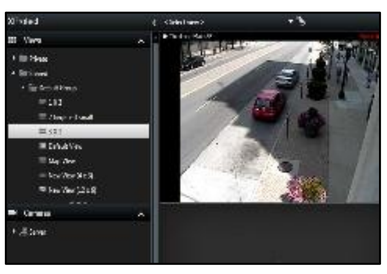
Team: Drew Bowers (Lead), Nilesh Powar (Ph.D), Binu M Nair (Ph.D), Kelly Cashion, Patrick Ryan

Video Analytics, Human Factors, Pedestrian Behavior Analysis

Footprint

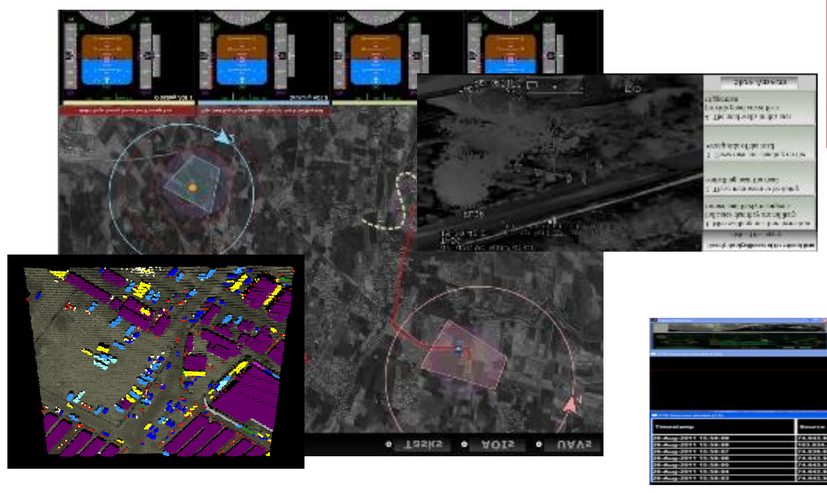


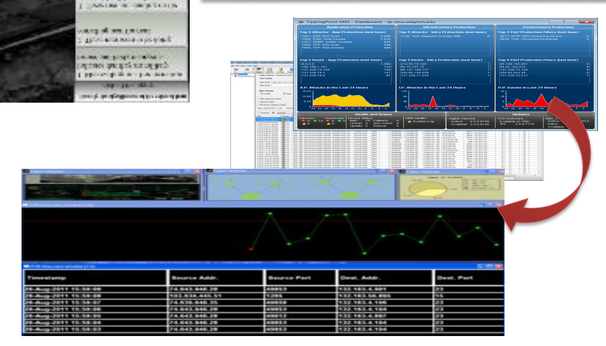




- City scale contextual and situational awareness with advanced sensor fusion and technology
- Intuitive visualization with inter-operable plugin-based architecture.
- Based on 2D and 3D accurate GPS maps

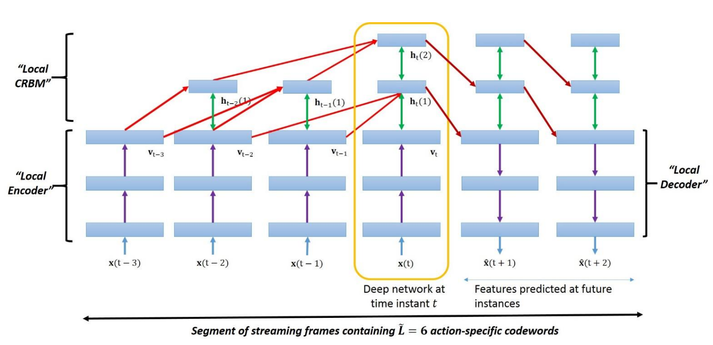
User Interface Design
Usability Evaluation
Human Performance Measurement
Data Visualization
Knowledge Elicitation and Task Analysis
Vigilance Research
Inform Cognitive Models
Clinical Decision Support



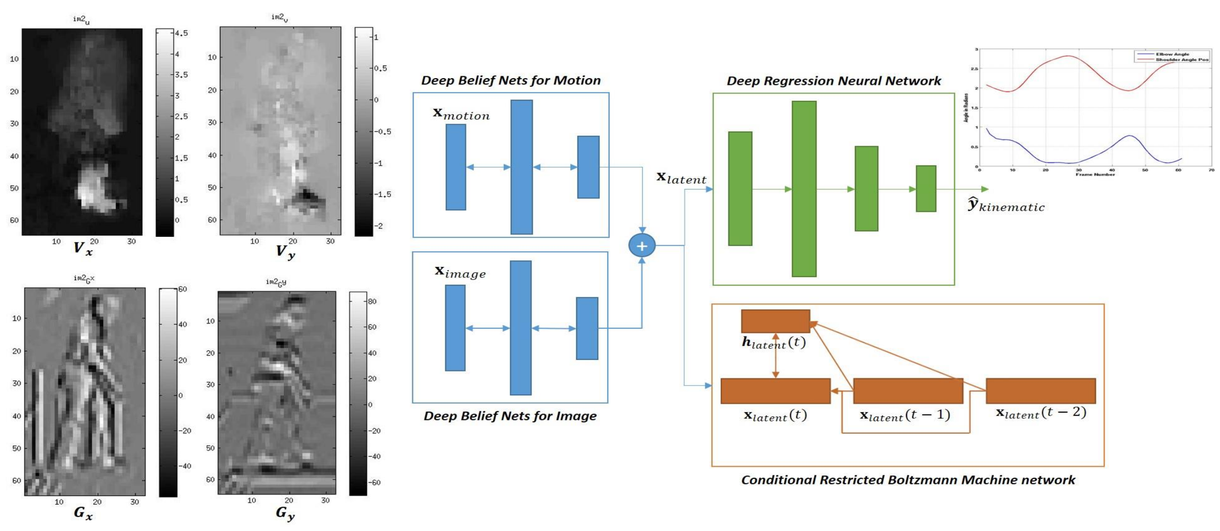


- Dynamic environment allowing for a wide variety of human performance experimentation
- Bridging the gap between controlled laboratory and complex real-world environments
- Demonstrated history of successfully and accurately running experimental protocols
- Simulated cyber environment that captures the physical and cognitive demands of operations

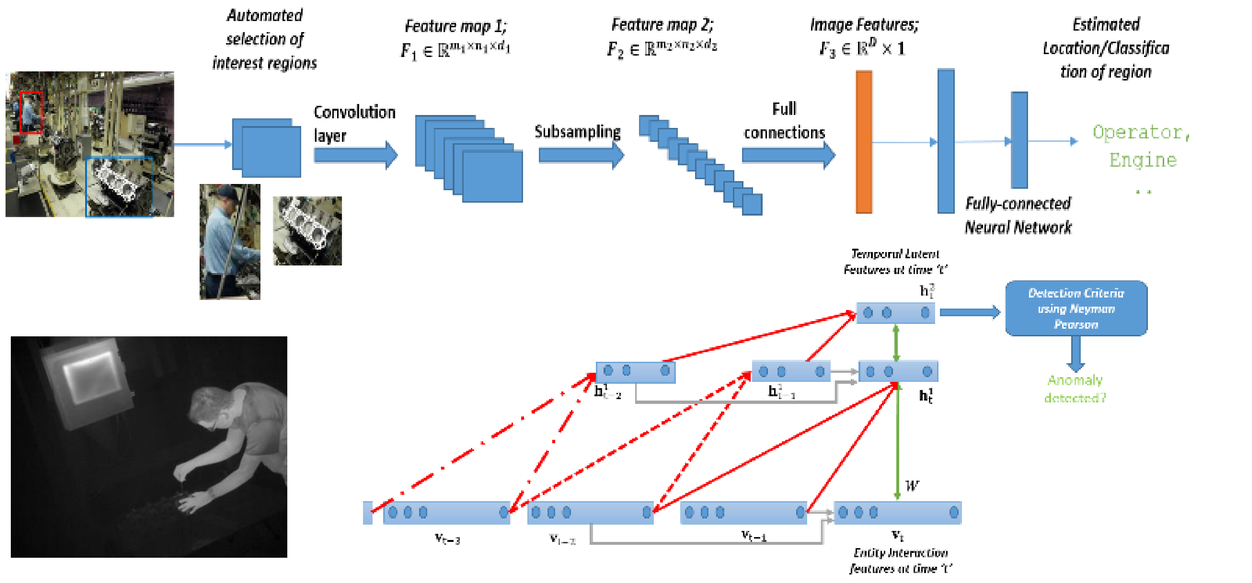
Research Areas of Interest



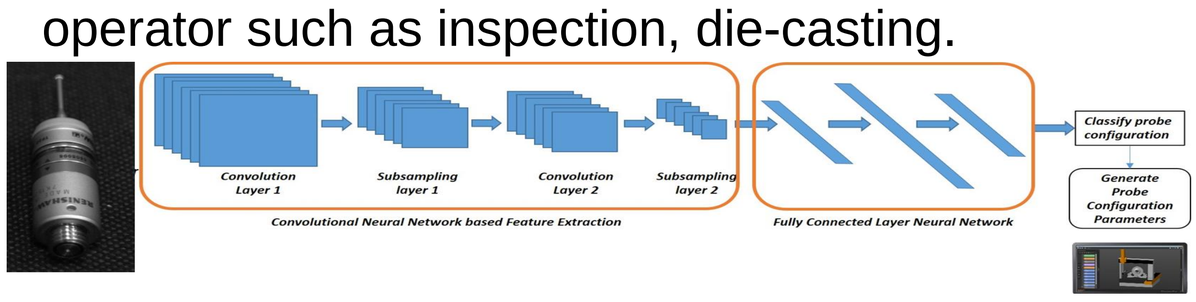
- Action localization using unsupervised temporal models in live streaming video.



- Real time evaluation of gait patterns for threat detection.



- Multi-model analysis for anomaly detection in manufacturing environment using deep learning.
- Thermographic analysis of process with or without operator such as inspection, die-casting.



- Recognition and characterization of CMM probes for machine vision and measurement.

Expertise and Interests

What we excel in:

- Software prototype development using open-source/proprietary research models.
- Sensor exploitation and integration.
- Human factors and behavior analysis research.

What we are interested in:

- Partners in research collaboration for developing novel deep learning techniques.
- Partners for taking prototype to production and commercialization of technology.

Point of Contact

Binu M Nair
Research Engineer (PhD)
Sensor Systems Division, UDRI
Ph: 937-232-5000
Email: binu.nair@ud-research.org